

# The Relationship between Online Shopping Environments, Sales Promotions, Website Quality, and Impulsive Buying Behaviour: A Structural Equation Modelling Approach

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There is a need to understand the factors influencing impulse buying in an online context due to the drastic increase in popularity of online shopping amongst consumers worldwide. The purpose of this study is to examine the relationship between online shopping environments, sales promotions, website quality and impulsive buying behaviour. A total of 548 valid and reliable questionnaires were collected from individuals in Kuala Lumpur, Malaysia to empirically test the measurement and structural model applying a covariance-based structural equation modelling (CB-SEM) technique. The study sample includes experienced online consumers who shop for products and services via online retail platforms. Online impulse buying in the context of shopping environments, sales promotion, and website quality have not been profoundly explored in current literature, despite its important implication for academic scholars, business practitioners, and consumers alike. The results obtained imply that online shopping environments, sales promotion, and website quality have a positive significant influence on online impulse buying. These findings are expected to assist online retailers focus on developing better online shopping websites and more creative sales promotions programs.

**Key words:** *Impulse Buying, Online Shopping Environment, Sales Promotion, Website Quality, Online Retailing.*

## Introduction

Impulse buying in online retail environments is becoming an important subject among manufacturers, retailers and researchers. Impulse buying has been heavily discussed since 1990, with a number of scholars investigating consumers' buying decisions and the possible factors that can stimulate unplanned purchases of profitable products and/or categories (Bucklin & Lattin, 1991; Beatty & Ferrel, 1998; Bell et al., 2011; Bellini, Cardinali, & Grandi, 2017). Rook (1987) defined impulse buying as an action, where a person sees a product and feels a compelling need and persistent urge to buy it immediately. Research findings suggest that impulse buying can typically be categorized as unplanned purchases (e.g. Zhang et al., 2010; Verhagen and van Dolen, 2011; Kacen et al., 2012).

As for retailers, impulse buying is definitely a positive phenomenon where unplanned and additional purchases occur, this implies that they constitute additional income. Past research has shown that unplanned purchases account for up to 60% of all purchases (Mattila & Wirtz, 2008). In fact, 40% of consumers who shop online consider themselves as impulse shoppers (Verhagen & van Dolen, 2011; Farhani, 2013). Because of the practical implications of impulse buying among consumers, retailers are making considerable efforts to facilitate this phenomenon on an ongoing basis (Kervenoael et al., 2009; Roberts & Manolis, 2012). Apart from that, in an online retail context, many retailers started to have a better understanding of impulse buying behaviour. This is due to the countless shopping opportunities as well as the ability to attract and retain customers. Retailers are not the only group with this interest, academics are also interested in this phenomenon especially in an online context.

The growing number of online retail businesses today has significantly changed marketing patterns. Online marketing becomes vital and becomes a must-do activity among online business practitioners in order to gain customers' attention. This is due to customers' ability to freely choose and change online shops in a matter of seconds. Additionally, Chen & Yao (2018) in their study found that there is a rise in impulse buying among consumers that causes them to buy frequently and purchase more via online shopping platforms.

Most prior studies on impulse buying focused on the attributes of online retail stores such as media format (Adelaar et al., 2003), visual appeal (Zhang et al., 2006; Liu et al., 2013; Turkyilmaz et al., 2015), buyers' personal characteristics such as gender, motives and norms (Jeffrey & Hodge, 2007; Lin & Lo, 2015; Wang, 2015), and website characteristics (Ning & Khalifa, 2012; Liu, Li, & Hu, 2013). There are also extensive studies on sales promotions but mainly from a traditional marketing perspective. However, only a few researchers have investigated the effects of online shopping environment (Chen, Su, & Widjaja, 2016), sales promotions (Xu & Huang, 2014), and website quality (Lin & Lo, 2016) towards online impulse buying. Therefore, this study considers the structure of past studies in assessing the

effect of online shopping environments, sales promotions, and website quality on impulse buying in an online context and focuses only on consumers who have experienced online shopping impulse buying.

## **Literature Review and Hypotheses**

### ***Impulse Buying***

Research findings suggest that impulse buying can normally be categorized as unplanned purchases, but unplanned purchases cannot always be categorized as impulse buying (Zhang, Winterich, & Mittal, 2010; Verhagen & Dolen, 2011). Research done by Rook (1987) suggests that not all unplanned buying is impulsively decided because it is possible that impulse buying can occur even though the consumers' purchase involved a high degree of planning. Iyer (1989) agreed with Rook's (1987) theory by stating that all impulse buying is at least unplanned, but all unplanned purchases are not necessarily decided impulsively. However, later studies regarding this 'unplanned buying vs. impulse buying' describe an impulse buy as an unplanned buy where the decision is made only in store during a buying process which is still incomplete, they acknowledge this definition is arguable as this behaviour is still too broad (Kalla & Arora, 2011).

### ***Online Shopping Environment***

Kotler (1973) and Kollat & Willet (1976) are among the first scholars that introduced the concept of a shopping environment in the retail industry by defining it as an effort to design a store environment to enhance purchase intention amongst buyers. Young & Faber (2009) summarise that equipment, store cleanliness, theme colours, store layout, merchandise display, and store decoration are among the tangible parts for a store environment. Intangible parts of the store environment comprise of temperature, scent, music, and lighting. As for the shopping environment in online context, the concept is still the same as the shopping environment at physical store. Eroglu, Machleit, & Davis (2001) summarised the similarity between online and physical shopping environment by stating that the entire physical store environment is reduced to a computer screen and the environment for online shopping is still based on the same dimensions (layout, ambient cues, and signals). These assertions are supported by Bitner (1992), who emphasised that shopping environment factors must include all the cues that are visible and audible to the shoppers.

Greeland & McGoldrick (2000) in their study on buying apparel products via online platforms defined the shopping environment as the physical characteristics or surrounds that influence and attract customers. It has been highlighted by Dabholkar, Thorpe, & Rentz (2007) that the contribution of online shopping environment towards customer shopping convenience directly influences the shopping experience. Proper combinations of shopping

environmental characteristics are crucial in stimulating customers' desire to purchase (Kotler, 1973; Fung & Liu, 2018). This study focuses on multiple characteristics of the online shopping environment: represent information availability, download delay, and product picture. Therefore, the following hypothesis is proposed:

H1. Online shopping environment positively affects online impulsive buying behaviour

### ***Sales Promotion***

Haugh (1983) defined sales promotion as “a direct inducement that offers an extra value or incentive for the product to the sales force, distributors, or the final consumer with the primary objective of creating an immediate sale”. A similar definition has also been proposed by Belch & Belch (2003). In fact, large numbers of definitions of sales promotion that have been proposed by scholars have a common viewpoint i.e. they involve a temporary and tangible modification of supply, for the ultimate goal of direct impact on the behaviour of the consumer, retailer or sales force (Shi, Cheung, & Prendergast, 2015). Sales promotion techniques are instruments that seek to increase sales of products and brands, usually in a short time (Wierenga & Soethoudt, 2010). According to the works of Chan (1996) and Campbell and Diamond (1990), this study classified four online promotion forms: “Price Discounts; Buy More Save More; Discount Coupon; Flash Sale”. With stimulation from online promotion information, customers improve their perception ability of products, which further leads to their impulsive purchasing behaviour (Madhavaram & Laverie, 2004).

Youn & Faber (2000) proved that a price discount influences impulse buying through their findings on the relationship between short-term satisfactions of impulsive consumers. A later study by Xu & Huang (2014) found that price discounts heavily influence consumers' intentions to buy impulsively. Bonus packs in sale promotion programs act as gains and are viewed as better than those acts as reduced losses (Diamond & Sanyal, 1990; Diamond, 1992). In fact, some consumers view bonus packs in a very positive way because they believe that they are getting something for “free” for the same price (Chandran & Morwitz, 2006). Another type of sales promotion is coupons. Huff & Alden (1998) highlighted that the more price-conscious the consumer, the more positive their attitude will be towards a coupon. In summary this study focuses on price discount, bonus packs, and coupons as sales promotion techniques to influence online consumers to buy impulsively. Therefore, the following hypothesis is proposed:

H2. Online sales promotions positively affect online impulsive buying behaviour.

### ***Website Quality***

Past research has showed that website quality can influence a consumer's propensity to engage in online impulse buying (Zhang & Dran, 2002; Wells, Parboteeah, & Valacich, 2011; Turkeyilmaz, Erdem, Uslu, 2015). Taylor, Parboteeah, & Snipes (2010) found that website design was necessary for a quality and effective online retail store, this was determined by a number of dimensions such as ease of navigation, website appearance, website security, download delay, and information availability. To extend the research conducted by Taylor et al. (2010), several factors mentioned are now selected in this study. Lin & Lo (2016) identified that website quality (i.e. virtual layout) of an online retail store is one of the key stimulus factors in the context of online impulse buying as the purchasing power of the individual is increased

In a traditional retail context, retailers manipulate atmospheric cues in retail settings to trigger impulse purchases (Rook & Fisher, 1995). Similarly, in an online retail context, many researchers have examined the characteristics of the online environment that lead to impulse purchases (e.g. Parboteeah et al., 2009; Park, Kim, Funches, & Foxx, 2012; Zou, 2016). Such environmental cues often manifest themselves as various website characteristics (i.e. ease of use, ease of navigation, and website security) that influence the consumers' impulsivity in buying online (Cheung & Lee, 2000; Taylor et al., 2010; Liu, Li, & Hu, 2013). Collectively, these characteristics represent the many aspects of website quality (Loiacono et al., 2007; Wells, Parboteeah & Valacich (2011). Therefore, the following hypothesis is proposed:

H3. Website quality positively affects online impulsive buying behaviour.

### **Methodology**

This study population involved young people in Malaysia who have experienced buying products or services via online retail websites. The reason for choosing young people in Malaysia is because this segment is the majority of the Malaysia's population (Muda et al., 2016). Additionally, they are the most prolific users of the Internet in Malaysia (MCMC, 2018). A set of 650 questionnaires were distributed to selected undergraduate students from Malaysian universities in peninsular Malaysia. A total of 548 complete questionnaires managed to be collected. A demographic profile was gathered from the samples. Table 1 presents the demographic details of the samples.

**Table 1:** Demographic of the Samples

Variable	Categories	N	Percentage (%)
Gender	Male	237	43.2
	Female	311	56.8
Age	19-30	548	100.0
Monthly Income	Below 1,000 MYR	548	100.0
Online Shopping Experience	Yes	548	100.0
Online Impulse Buying Experience	Yes	548	100.0

Structural equation modelling (SEM) was used to assess the measurement model and hypotheses testing arising from the theoretical model. In order to perform the SEM analysis, the two-stage approach recommended by Anderson & Gerbing (1988) was adopted. In the first stage, the measurement model analysis was conducted by specifying the causal relationships between the observed variables and the underlying theoretical constructs. Beforehand, the data was tested for linearity, normality, homoscedasticity and multicollinearity. All these basic assumptions were acceptable and prove that the data meets the conditions of the basic assumption of parametric approach analysis (Hair et al., 1995).

For these purposes, a confirmatory factor analysis (CFA) procedure was carried out using AMOS 24 to determine the unidimensionality and validity of the measurement model and the model fit indices (Awang, 2014). Second stage assessment of the structural equation modelling serves as a basis for hypotheses testing which analyses the relationship path of the inner model between latent variables. Factor loading produced by AMOS 24 outputs were assessed to determine the measurement model validity in terms of unidimensionality (Awang, 2014). The factor loadings of the indicators were all above 0.7 and significant ( $p \leq 0.01$ ), ranging from 0.71 to 0.84, which validated the presence of construct validity at items level. Henceforth, the analysis process proceeds to confirm the model through a pooled CFA procedure. An examination of the standardised residual covariance matrix and modification indices conducted resulted in the omission of a few items in order to obtain a model fit that better represents the data.

This deletion was conducted based on the highest absolute value of standardised residual covariance. This indicated that a particular covariance is not well reproduced by the hypothesised model (Awang, 2015). As a result of the deletion, the new model does fit the data represented by the pooled CFA result, which revealed the significant parsimonious fit of Chi-square/df = 1.744 was less than 3.0 (March & Hocevar, 1985), confirming the model fit of the data as well. It is also proven by other model fit indices including RMSEA (0.037), GFI (0.976), AGFI (0.960), IFI (0.984), CFI (0.984) in which it was satisfied that the cut-off point is at an acceptable range.

CFA output confirmed that the model fit the data well, no more re-specification of the measurement model is necessary. This result is supported by Holmes-Smith (2001), which stated that deleting the items during CFA will increase the model parsimony. After CFA analysis was conducted on the research model and the results indicate that the model fit the validity of the measurement, there is a need to re-examine, especially if the CFA involves a deletion process. This stage follows Hair et al. (2006), who suggest the examination of validity and reliability of constructs through internal consistency, convergent and discriminant validity assessments. Accordingly, the Average Variance Extracted (AVE), composite reliability (CR), and Fornell Larker's criterion were conducted in order to assess reliability, convergent validity and discriminant validity. Obtained results are detailed in Table 2. Hair et al. (2006) and suggest that an AVE should be  $> 0.50$ , composite reliability  $> 0.6$  and internal consistency of Cronbach's alpha  $> 0.6$  (Sekaran & Bougie, 2016). With reference to Table 4, all indices confirmed that all constructs and items were reliable and valid.

**Table 2:** Result of Reliability and Convergent Validity

Construct	Items	Reliability		Convergent Validity
		Cronbach's Alpha	Composite reliability (CR)	Average variance Extracted (AVE)
Web Quality (WEBQ)	WQ1	0.893	0.803	0.896
	WQ3			
	WQ4			
Shopping Environment (SHOPENVI)	SE1	0.796	0.797	0.893
	SE2			
	SE3			
Sales Promotion (SALESPROMO)	SP4	0.821	0.717	0.847
	SP5			
	SP6			
Impulse Buying (IB)	IB4	0.870	0.638	0.799
	IB5			
	IB6			

With regard to further confirming that each latent construct were distinct. Discriminant validity was conducted using Fornell Larker's criterion by assessing the square root AVEs and their correlation coefficients (Fornell & Larker. 1981). In order to determine discriminant validity, Fornell Larker's criterion was assessed and the square root AVEs must be greater than its correlations with another construct. Table 3 represents discriminant validity

assessment of Fornell Larker’s criterion. Values of square root for all constructs were greater than its correlations, thus, discriminant validity was achieved.

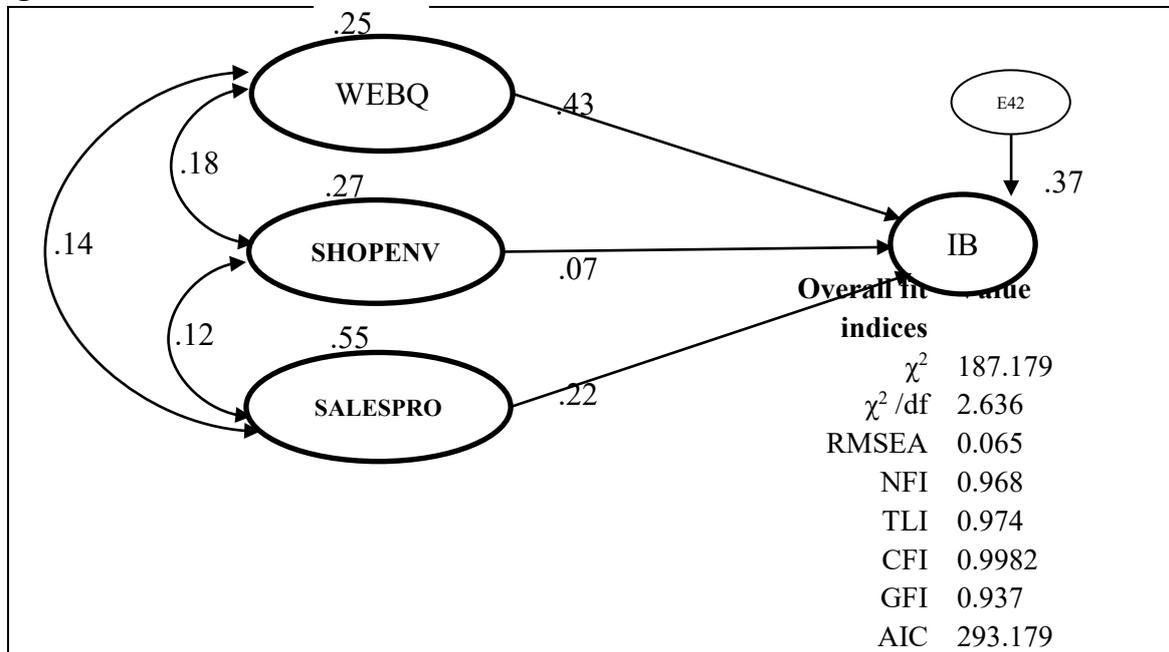
**Table 3:** Fornell Larker’s criterion assessment on discriminant validity of constructs

Construct	WEBQ	SHOPENVI	SALESPROMO	IB
<b>WEBQ</b>	<b>0.946</b>			
<b>SHOPENVI</b>	0.653	<b>0.944</b>		
<b>SALESPROMO</b>	0.745	0.683	<b>0.920</b>	
<b>IB</b>	0.578	0.712	0.621	<b>0.893</b>

*Note:* Diagonals represent the square root of the average variance extracted (AVE).

Based on the aforementioned measurement model, the assessment results on CFA model fit, reliability and validity, it is confirmed that the model is fit and ready for structural model analysis in determining relationships between latent constructs. Maximum likelihood method (MLE) was employed in estimating the structural model. Figure 1 represents the final result of the structural model with results of model fit indices. Model fit indices confirmed that a SEM assessment on the structural model had complied with the values recommended for a good model fit (Awang, 2015).

**Figure 1.** Structural model with model fit indices



Based on Figure 1, the model accounted for 37% of the variance explained in impulse buying. All paths were significant shown by *p*-values of less than 0.05, with ranges between 0.000 – 0.029. With regard to the magnitude of path relationship between exogenous

constructs on endogenous constructs, website quality has the strongest effect on impulse buying followed by sales promotion and the shopping environment. Table 4 reflects the regression weights results for each direct relationship. Furthermore, Table 5 summarised the results of the structural model that were established to test the research hypotheses (H1, H2 & H3).

**Table 4:** Regression Weights Results

Latent to Latent		Variables	Estimation	S.E.	C.R.	P
IB	<---	SHOPENVI	0.215	0.103	2.517	0.012
IB	<---	SALESPROM O	0.724	0.602	1.204	0.043
IB	<---	WEBQ	0.944	0.042	22.572	0.000

**Table 5:** Summarised result on hypotheses testing

Hypothesis	CR	<i>p</i> -value	Decision
H1: Online shopping environment positively affect online impulsive buying behaviour.	2.517	0.012	Supported
H2: Online sales promotions positively affect online impulsive buying behaviour.	1.204	0.029	Supported
H3: Website quality positively affect online impulsive buying behaviour.	22.572	0.000	Supported

## Discussion and implication

Shopping environments and online impulse buying appeared to be positively related. This relationship shows that consumers are influenced by the creation of good shopping environments and that this ultimately leads to impulsive buying. It can be concluded that when consumers have experience a convenient feeling when shopping on an online retail store, there is a high possibility of them buying impulsively. In fact, a good online shopping environment increases consumers' confidence level which also reduces uncertainty in impulsive purchase decisions. In summary, Malaysian consumers are sensitive towards shopping environments provided by online retailers. They have a high tendency to buy impulsively when influenced by good shopping environment offered by online retailers.

It is clear from this study's findings that a positive relationship exists between sales promotion and online impulse buying. The existence of this relationship proves that consumers have are more likely to buy impulsively when they being influenced by sales

promotion. Therefore, in order to gain good sales, online retailers need to focus on creating creative and effective sales promotion, for example half-price discounts, free item on second item purchased, and free 1-year warranty. Thus, online retailers also are encouraged to discover new methods to create impulsive buying behaviour among consumers via creative sales promotion programs.

There is a significant positive relationship between website quality and online impulse buying. Consumers are influenced to buy impulsively by good website quality. With adequate features on the online retail stores, consumers feel comfortable and at ease when navigating the website looking for product they wish to buy. The analysis results also indicate that online consumers in Malaysia are moderately sensitive towards website quality provided by online retailers. Online retailers have to gradually evolve to focus on providing a better quality of website in order to influence shoppers to buy impulsively throughout their entire shopping experience.

### **Research Limitations and Future Studies**

This study focuses on factors that affect online consumers in Malaysia who have the potential to buy impulsively from an online retail store. Further research is needed to explore and determine the full extent to which these factors change consumers' impulse buying behaviour. Different shopping environments might lead to different behaviours, depending on variations in online retail store design, availability of payment gateway, product options, and other factors that might change the shopping environment. Therefore, different factors, scenarios, products, setting, and also various respondent demographics can be used for analysis in order to further develop an understanding on online impulse buying behaviours. It is recommended that future studies should sample respondents from different settings in terms of locations, or consider demographic factors as a mediating or moderating factor in discovering online impulse buying. One of the major limitations of this study is that there is no focus on specific products in the selected online retail industry e.g. fashion, beauty, and electrical appliances. Since there are no products assumed, this study is not fully representing purchases of any specific product category. Thus, it is suggested that future research focuses on specific product categories or industries.

## REFERENCES

- Adelaar T., Chang S., Lancendorfer K.M., Lee B. & Morimoto M., (2003). Effects of Media Formats in Emotions and Impulse Buying Intent, *Journal of Information Technology*, 18 (4), pp. 247–266.
- Ahmed, U., Khalid, N., Ammar, A., & Shah, M. H. (2017). Assessing moderation of employee engagement on the relationship between work discretion, job clarity and business performance in the banking sector of Pakistan. *Asian Economic and Financial Review*, 7(12), 1197-121. <https://doi.org/10.18488/journal.aefr.2017.712.1197.1210>
- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411–423.
- Awang, Z. (2015). SEM Made Simple: A Gentle Approach To Learning Structural Equation Modeling. MPWS Rich Publication.
- Awang, Z. (2014). A handbook on structural equation modeling. MPWS Rich Resources.
- Beatty, S. E., & Elizabeth Ferrell, M. (1998). Impulse Buying: Modeling Its Precursors. *Journal of Retailing*, 74(2), 169–191.
- Belch, G.E. & Belch, M.A. (2003). Advertising and Promotion: An Integrated Marketing Communications Perspective, 6th Edition. Boston, MA: McGraw-Hill.
- Bell, D., Corsten, D., Knox, D., 2011. From Point of Purchase to Path to Purchase: How Preshopping factors drive Unplanned Buying. *J. Mark.* 75 (1), 31–45
- Bellini, S., Cardinali, M. G., & Grandi, B. (2017). A structural equation model of impulse buying behaviour in grocery retailing. *Journal of Retailing and Consumer Services*, 36(2), 164–171.
- Bitner, M.J. (1992). Servicescapes: The Impact of Physical Surroundings On Customers and Employees. *Journal of Marketing*, 56, 57-71.
- Bucklin, R. E., & Lattin, J. M. (1991). A Two-State Model of Purchase Incidence and Brand Choice. *Marketing Science*, 10(1), 24-39
- Chandran, S., & Morwitz, V. G. (2006). The Price of “Free”-Dom: Consumer Sensitivity to Promotions with Negative Contextual Influences. *Journal of Consumer Research*, 33, 384-392.



- Chen, J. V., Su, B. C., & Widjaja, A. E. (2016). Facebook C2C Social Commerce: A Study of Online Impulse Buying. *Decision Support Systems*, 83, 57–69.
- Chen, C.-C., & Yao, J.-Y. (2018). What Drives Impulse Buying Behaviours In A Mobile Auction? The Perspective of the Stimulus-Organism-Response model. *Telematics and Informatics*, (December 2017), 0–1.
- Chiang-Kuo Tu1, Kuan-Wei Wu, C.-H. J. and Y. H. (2017). The Impact of Online Promotions on Online Impulsive Buying Behaviour: Mediating Effects of Perceived Value, Positive Emotion, and Moderating Effects of Online Reviews, *Economics & Management Innovations (ICEMI)* 1(1) (2017) 280-282.
- Dabholkar P. A., Thorpe D. I. & Rentz J. O. (2007). The internet shopper, *Journal of Advertising Research*, 39(3), 52-59.
- Diamond, D.W., & Sanyal, A. (1990). The Effect of Framing on the Choice of Supermarket Coupons. *Advances in Consumer Research*, 17, 488-493.
- Diamond, W. D. (1992). Just What is a “Dollar’s Worth”? Consumer Reactions to Price Discounts vs. Extra Product Promotions. *Journal of Retailing*, 68, 254-270.
- Eroglu, S.A., Machleit, K.A., & Davis, L.M. (2001). Atmospheric Qualities of Online Retailing: A Conceptual Model and Implications, *Journal of Business Research*, 54(5), 177-184.
- Fornell, C., & Larcker, D. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18, 39–50.
- Farhani, S. (2013). Renewable Energy Consumption, Economic Growth and Co2 Emissions: Evidence from Selected MENA Countries. *Energy Economics Letters*, 1(2), 24-41
- Fung, M. E., & Liu, M. S. M. (2018). Assessing Student Reflection in a Malaysian Classroom. *Asian Journal of Education and Training*, 4(4), 272-279.
- Greeland & McGoldrick (2000). Buying Apparel Over the Internet, *The Journal of Product and Brand Management*, 11, 89-100.
- Haugh, L.J. (1983) Defining and Redefining. *Advertising Age*, 14 February, p. 44.
- Haseeb, M., Hussain, H., Slusarczyk, B., & Jermsttiparsert, K. 2019. “Industry 4.0: A Solution towards Technology Challenges of Sustainable Business Performance.” *Social Sciences* 8 (5): 184.



- Hair, J., Anderson, R. ., Tatham, R. ., & Black, W. (1995). *Multivariate data analysis*. (4th edn). New Jersey: Prentice-Hall.
- Hair, J., Black, W., Babin, B., Anderson, R., & Tatham, R. (2006). *Multivariate data analysis* (6th ed.). Uppersaddle River, N.J.: Pearson Prentice Hall
- Huff, L.C. & Alden, D.L. (1998). An Investigation of Consumer Response to Sales Promotions in Developing Markets: A Three-Country Analysis. *Journal of Advertising Research*. 38(3), pp. 47–56.
- Holmes-Smith, P. (2001). Introduction to Structural Equation Modelling Using LISREL. ACSPRI-Winter training program, Perth.
- Iyer, E. S. (1989). Unplanned Purchasing—Knowledge of Shopping Environment and Time Pressure. *Journal of Retailing*. 65(1), 40–57.
- Jeffrey, S. A., & Hodge, R. (2007). Factors Influencing Impulse Buying During an Online Purchase. *Electronic Commerce Research*, 7, 367-379.
- Kalla, S. M., & Arora, A. P. (2011). Impulse Buying. *Global Business Review*. 12(1), 145–157.
- Kollat D. T. & Willett R. P. (1976). Customer Impulse Purchasing Behaviour, *Journal of Marketing Research*, 4, 21-31.
- Kacen, J. J., Hess, J. D., & Walker, D. (2012). Spontaneous Selection: The Influence of Product and Retailing Factors On Consumer Impulse Purchases. *Journal of Retailing and Consumer Services*, 19(6), 578–588.
- Kervenoael, R., Selcen, D., Aykac, O., & Palmer, M. (2009). Online Social Capital: Understanding E-Impulse Buying in Practice. *Journal of Retailing and Consumer Services*, 16(4), 320–328.
- Kotler P. (1973). Atmospherics as a Marketing Tool, *Journal of Retailing*, 49(4), 48-64.
- Kollat, D.T. and R.P. Willet (1967). Customer Impulse Purchasing Behavior, *Journal of Marketing Research*, 4, 21-31
- Lin, S.-W., & Lo, L. Y.-S. (2016). Evoking Online Consumer Impulse Buying Through Virtual Layout Schemes. *Behaviour & Information Technology*, 35(1), 38–56.



- Liu, Y., Li, H., & Hu, F. (2013). Website Attributes in Urging Online Impulse Purchase: An Empirical Investigation On Consumer Perceptions. *Decision Support Systems*, 55(3), 829–837
- Loiacono, E., Watson, R., & Goodhue, D. (2007). WebQual: An Instrument for Consumer Evaluation of Web Sites. *International Journal of Electronic Commerce*, 11(3), 51–87.
- Marsh, H. W., & Hocevar, D. (1985). Application of Confirmatory Factor Analysis to The Study Of Self-Concept: First- And Higher Order Factor Models and Their Invariance Across Groups. *Psychological Bulletin*, 97(3), 562-582.
- Mattila, A. S., & Wirtz, J. (2008). The Role of Store Environmental Stimulation and Social Factors On Impulse Purchasing. *Journal of Services Marketing*, 22(7), 562-567
- MCMC (2018), Malaysian Communications and Multimedia Commission, Internet Users Survey 2017. *The Internet Users Survey*, 76. Retrieved from SKMM Malaysia Website on 11 March 2018.
- [https://www.mcmc.gov.my/skmmgovmy/media/General/pdf/MCMC-Internet-Users-Survey-2017\\_v2.pdf](https://www.mcmc.gov.my/skmmgovmy/media/General/pdf/MCMC-Internet-Users-Survey-2017_v2.pdf)
- Mohan, G., Sivakumaran, B., & Sharma, P. (2013). Impact of Store Environment On Impulse Buying Behaviour. *European Journal of Marketing*, 47(10), 1711–1732.
- Muda, M., Mohd, R., & Hassan, S. (2016). Online Purchase Behaviour of Generation Y in Malaysia. *Procedia Economics and Finance*, 37(July), 292–298.
- Ning Shen, K., & Khalifa, M. (2012). System Design Effects On Online Impulse Buying. *Internet Research*, 22(4), 396–425.
- Park, E. J., Kim, E. Y., & Fournier, J. C. (2006). A Structural Model Of Fashion-Oriented Impulse Buying Behavior. *Journal of Fashion Marketing and Management*, 10(4), 433–446.
- Piron, F. (1991). "Defining Impulse Purchasing". *Advance in Consumer Research*. 18(1), 509-514.
- Rook, D. W. (1987). The Buying Impulse. *Journal of Consumer Research*, 189-199.

- Roberts, J.A., Manolis, C. (2012). Cooking Up a Recipe for Self-Control: The Three Ingredients of Self-Control and Its Impact On Impulse Buying. *J. Mark. Theory Practice*
- Sekaran, U., & Bougie, R. (2016). *Research Methods for Business: A Skill Building Approach* (7th edn). West Sussex, UK: John Wiley and Sons.
- Shi, Y., Cheung, K., & Prendergast, G. (2015). Behavioural Response to Sales Promotion Tools A Hong Kong Study. *International Journal of Advertising*. 37–41.
- Taylor, D. C., Parboteeah, D. V., & Snipes, M. (2010). Winery websites: Effectiveness explored. *Journal of Business Administration Online*, 9(2), 1–11.
- Turkyilmaz, C. A., Erdem, S., & Uslu, A. (2015). The Effects of Personality Traits and Website Quality on Online Impulse Buying. *Procedia - Social and Behavioral Sciences*, 175 (February), 98–105.
- Verhagen, T., & Van Dolen, W. (2011). The Influence of Online Store Beliefs on Consumer Online Impulse Buying: A Model and Empirical Application. *Information and Management*. 48(8), 320–327.
- Wang, H. (2015). Study of Influencing Factors on Consumer Online Impulse Buying. *Management Science and Research*, 4(2), 19–25.
- Wells, J. D., Parboteeah, D. V., & Valacich, J. S. (2011). Journal of the Association for Information Online Impulse Buying: Understanding the Interplay between Consumer Impulsiveness and Website Quality, Online Impulse Buying: Understanding the Interplay between Consumer Impulsiveness and Website Quality. *Journal of the Association for Information Systems*, 12(1), 32–56.
- Wierenga, B., & Soethoudt, H. (2010). Sales Promotions and Channel Coordination. *Original Empirical Research*. 38(3), 383-397.
- Xu, Y., & Huang, J.-S. (2014). Effects of price discounts and bonus packs on online impulse buying. *Social Behaviour and Personality*. 42(8), 1293–1302.
- Young S. & Faber R. J. (2009). Impulse buying: Its relation to personality traits and cues. *Advances in Consumer Research*, 27, 79-185.
- Zhang, X., Prybutok, V. R., & Koh, C. E. (2006). The Role of Impulsiveness in a TAM-Based Online Purchasing Behaviour. *Information Resources Management Journal (IRMJ)*, 19(2), 54-68.



- Zhang, Y., Winterich, K.P., Mittal, V. (2010). Power Distance Belief and Impulsive Buying. *Journal of Marketing Research*. 47 (5), 945–954.
- Zou, T. (2016). Online Impulse Buying Behavior amongst Undergraduate Students in Tianjin, The People’s Republic of China, 406–423.